SCIENCE ABSTRACTS.

SECTION A.—PHYSICS.

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ERRATA.

Section A.—PHYSICS.

Subject Index, 1928, page 1127, last line; *for* 2667, *read* 2677.
,, ,, ,, , page 1144, line 6; *for* 2667, *read* 2677.
Abstract No. 61, line 1; *for* Snock, *read* Snoek.
Abstract No. 502, line 2; *for* P. C. van Cittert, *read* P. H. van Cittert.
Abstract No. 1060, line 2; *for* E. Rasetti, *read* F. Rasetti.
Abstract No. 1198, line 16; *for* Bermuth, *read* Bormuth.
Abstract No. 1344, line 2; *for* Mayer, *read* Meyer.
Abstract No. 1475, line 8; *for* 0·8191, *read* 0·819 I.
Abstract No. 1402, line 10; *for* viscosity, *read* surface tension.
Abstract No. 1487, line 1; *for* A. Jarry-Desloges, *read* R. Jarry-Desloges.
Abstract No. 1899, line 1; *for* X-Rays, *read* α-Rays.
Abstract No. 2024, line 5; *for* Pointing, *read* Poynting.
Abstract No. 2091, line 8; *for* KWO_3, read KNO_3.
Abstract No. 2181, lines 4, 8, 10, 15; *for* calsium, *read* cæsium.
Abstract No. 2603, line 2; *for* Hulbert, *read* Hulburt.
Abstract No. 2826, lines 6 and 9; *for* m.a., *read* mA.
Abstract No. 2854, p. 795, line 2; *for* movement, *read* moment, and line 3; *for* dialectric, *read* dielectric.
Abstract No. 2984, line 1; *for* H. Stölting, *read* W. Stölting.
Abstract No. 3018; *for* authors *read* J. Becquerel and W. J. de Haas.
Abstract No. 3029, line 2; *for* Ede, *read* Eder.
Abstract No. 3379, line 10, *for* Chladin, *read* Chladni.

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LIST OF JOURNALS AND THEIR ABBREVIATIONS

An asterisk (*) indicates that the Journals so marked are received only occasionally.

Abbreviation.	Full Title and Address.
Acad. Polonaise Sci. et Lettres, Bull.	Bulletin International de l'Académie des Sciences et des Lettres. Gebethner et Wolff, Rynek Gl., Cracovie, Poland.
Accad. Lincei, Atti	Atti della Reale Accademia Nazionale dei Lincei. Dott. Giovanni Bardi, Piazza Madama 19–20, Rome (III), Italy.
Accad. Sci. Torino, Atti	Atti della Reale Accademia delle Scienze di Torino. Libreria Fratelli Bocca, Via Carlo Alberto 3, Turin, Italy.
A.C.E.C.	Ateliers de Constructions Électriques de Charleroi. Route de Philippeville, Charleroi, Belgium.
A.E.G.Mitt.	A.E.G. Mitteilungen. Das Literarische Büro der AEG. Friedrich-Karl-Ufer 2/4, Berlin, N.W. 40. A.E.G. Electric Company, Ltd., 131, Victoria Street, Westminster, London, S.W. 1.
Akad. Wiss. Wien, Ber.	Sitzungsberichte der Akademie der Wissenschaften in Wien. Mathematisch-naturwissenschaftliche Klasse. Universitätsplatz, 2, Vienna, I.
Am. Acad., Proc.	Proceedings of the American Academy of Arts and Sciences. 28, Newbury Street, Boston, Mass., U.S.A.
Am. Chem. Soc., J.	Journal of the American Chemical Society. Charles L. Parsons, Mills Building, Washington, D.C., U.S.A.
Am. Electrochem. Soc., Trans.	Transactions of the American Electrochemical Society. Columbia University, New York, U.S.A.
Am. Illum. Eng. Soc., Trans.	Transactions of the American Illuminating Engineering Society. Easton, Pa., U.S.A.
A.I.E.E., J.	Journal of the American Institute of Electrical Engineers. 33, West 39th Street, New York, U.S.A.
Am. J. Sci.	American Journal of Science. New Haven, Connecticut, U.S.A.
Am. Phil. Soc., Proc.	Proceedings of the American Philosophical Society. 104, South Fifth Street, Philadelphia, Pa., U.S.A.
Ann. d. Physik.	Annalen der Physik. J. A. Barth, Salomonstrasse 18B, Leipzig, Germany.
Ann. de Physique	Annales de Physique. Masson et Cie, Libraries de l'Academie de Médecine, 120 Boulevard St. Germain, Paris (VI^{e}).
Annales des P.T.T.	Annales des Postes, Télégraphes et Téléphones. Librairie de l'Enseignement Technique, 3, Rue Thénard, Paris (V^{e}).
Ann. Soc. Sci. de Bruxelles	Annales de la Société Scientifique de Bruxelles. 2, Rue de Manège, Louvain, Belgium.
Arch. des Sciences	Archives des Sciences Physiques et Naturelles. Institut de Physique de l'Université, Geneva, Switzerland.
Arch. f. Elektrot.	Archiv für Elektrotechnik. J. Springer, Linkstrasse 23–24, Berlin, W. 9.
Arkiv f. Mat., Astron., och Fysik, Stockholm	Arkiv för Matematik, Astronomi, och Fysik, Almqvist & Wiksells Boktryckeri-A.-B., Stockholm. Wheldon & Wesley, Ltd., 2, 3 and 4, Arthur Street, London, W.C. 2.

Abbreviation.	Full Title and Address.
A.S.E.A., J.	ASEA Journal. Allmanna Svenska Elektriska A.B., Westeras, Sweden.
Assoc. Ing. El. Liége, Bull.	Bulletin de l'Association des Ingénieurs Électriciens sortis de l'Institut Électrotechnique Montefiore. 31, Rue-Gilles, Liége, Belgium.
Assoc. Suisse Élect., Bull.	Association Suisse des Électriciens Bulletin. Seefeldstrasse 301, Zürich 8, Switzerland.
Astron. J.	The Astronomical Journal. Dudley Observatory, Albany, New York, U.S.A.
Astrophys. J.	The Astrophysical Journal. The University of Chicago Press, Chicago, Illinois, U.S.A.
Bell System Techn. J.	Bell System Technical Journal. American Telephone & Telegraph Co., 195, Broadway, New York, U.S.A.
Brit. J. of Radiology	British Journal of Radiology. William Heinemann (Medical Books) Ltd., 99, Great Russell Street, London, W.C. 1.
Brown Boveri Rev.	The Brown Boveri Review. British Brown Boveri, Ltd., Trafalgar House, Waterloo Place, London, S.W. 1.
Bull. Astronomique	Bulletin Astronomique. Gauthier-Villars et Cie, 55, Quai des Grands-Augustins, Paris.
*Bull. géodésique	Bulletin géodésique. Organe de la Section de Géodésie de l'Union Géodésique et Géophysique Internationale. Général Perrier, 78, Rue d'Anjou, Paris (8e).
Bull. Oerlikon	Bulletin Oerlikon. Oerlikon, Ltd., 28–31, Essex Street, Strand, London, W.C. 2.
Bureau of Mines, Techn. Papers and Bull.	Publications of the Bureau of Mines. U.S. Department of Commerce, Superintendent of Documents, Government Printing Office, Washington, D.C., U.S.A.
Bureau of Standards, J. of Research (*formerly:* Bureau of Standards, Sci. or Technol. Papers)	Bureau of Standards. Journal of Research. Superintendent of Documents, Government Printing Office, Washington, D.C., U.S.A.
Calcutta Math. Soc., Bull.	Bulletin of the Calcutta Mathematical Society. H. P. Banerjee, M.Sc., 53/1, Shambazar Street, Calcutta, India.
Cambridge Phil. Soc., Proc.	Proceedings of the Cambridge Philosophical Society. Cambridge University Press, Fetter Lane, London, E.C. 4.
Cambridge Phil. Soc., Trans.	Transactions of the Cambridge Philosophical Society. Cambridge University Press, Fetter Lane, London, E.C. 4.
Canad. J. of Research	Canadian Journal of Research. National Research Council of Canada, Ottawa, Canada.
Chem. and Met. Eng.	Chemical and Metallurgical Engineering. McGraw Hill Publishing Co., Inc., Tenth Avenue at 36th Street, New York, U.S.A.
Chem. Soc., J.	Journal of the Chemical Society. The Chemical Society, Burlington House, Piccadilly, London, W. 1.
Chem. Soc. Japan, Bull.	Bulletin of the Chemical Society of Japan. Faculty of Science, Imperial University of Tokyo, Japan.
Colliery Guardian	The Colliery Guardian. 30 and 31, Furnival Street, Holborn, London, E.C. 4.
Comptes Rendus	Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences. Gauthier-Villars et Cie, Quai des Grands-Augustins 55, Paris.
*Cornell Univ. Eng. Experiment Sta., Bull.	Bulletin of the Engineering Experiment Station, College of Engineering, Cornell University. Ithaca, New York, U.S.A.
Dept. Sci. and Indust. Research, Publ.	Publications of the Department of Scientific Research. 16, Old Queen Street, Westminster, London, S.W. 1.

Abbreviation.	Full Title and Address.
Dominion Astrophys. Obs. Victoria, Publ.	Publications of the Dominion Astrophysical Observatory, Victoria. Victoria, B.C., Canada.
*Dominion Observat., Ottawa, Publ.	Publications of the Dominion Observatory, Ottawa. Department of the Interior, Ottawa, Canada.
El. Rev.	The Electrical Review. 4, Ludgate Hill, London, E.C. 4.
El. Rly. Bus and Tram J.	The Electric Railway Bus and Tram Journal. 37 and 38, Strand, London, W.C. 2.
El. Times	The Electrical Times. Sardinia House, Kingsway, London, W.C. 2.
El. World	Electrical World. McGraw Hill Publishing Co., Inc., Tenth Avenue at 36th Street, New York, U.S.A.
Elect. Communication	Electrical Communication. International Standard Electrical Corporation, 67, Broad Street, New York, U.S.A.; and Connaught House, Aldwych, London, W.C. 2.
Elect. J.	The Electric Journal. The Westinghouse Club, Keenan Building, Pittsburg, Pa., U.S.A.
Elect. News and Engineering (*formerly:* Elect. News, Toronto)	Electrical News and Engineering. Hugh C. MacLean Publications, Ltd., 347, Adelaide Street West, Toronto 2, Canada.
Electrician	The Electrician. Bouverie House, 154, Fleet Street, London, E.C. 4.
Electrot. Laborat. Tokyo, Japan, Circ.	Circulars of the Electrotechnical Laboratory, Tokyo, Japan. Electrotechnical Laboratory, Ministry of Communications, Tokyo, Japan.
Electrot. Laborat. Tokyo, Japan, Researches	Researches of the Electrotechnical Laboratory, Tokyo, Japan. Electrotechnical Laboratory, Ministry of Communications, Tokyo, Japan.
Elek. Betrieb	REA Der Elektrische Betrieb. Georg Siemens, Kurfürstenstrasse 8, Berlin, W. 57.
E.N.T.	Elektrische Nachrichten-technik. J. Springer, Linkstrasse 23–24, Berlin, W. 9.
Elek. im Bergbau	Elektrizität im Bergbau. R. Oldenbourg, Glückstrasse 8, Munich, Germany.
E.T.Z.	Elektrotechnische Zeitschrift. J. Springer, Linkstrasse 23–24, Berlin, W. 9.
E.u.M.	Elektrotechnik u. Maschinenbau. Theobaldgasse 12, Vienna 6.
Elettrotecnica	L'Elettrotecnica. Giornala ed Atti dell' Associazione Elettrotecnica Italiana. Via Annunciata 4, Milan (102), Italy.
Engineer	The Engineer. 33, Norfolk Street, Strand, London, W.C. 2.
Engineering	Engineering. 35 and 36, Bedford Street, Strand, London, W.C. 2.
Experimental Wireless	Experimental Wireless and the Wireless Engineer. Messrs. Iliffe & Sons, Ltd., Dorset House, Tudor Street, London, E.C. 4.
Faculty of Sci., Tokyo, J.	Journal of the Faculty of Science, Tokyo, The Imperial University of Tokyo, Japan.
Faraday Soc., Trans.	Transactions of the Faraday Society. Gurney & Jackson, 33, Paternoster Row, London.
Frank. Inst., J.	Journal of the Franklin Institute. The Franklin Institute of the State of Pennsylvania, Philadelphia, Pa., U.S.A.
Gen. El. Rev.	General Electric Review. The General Electric Co., Schenectady, New York, U.S.A.
Geofysiske Publ.	Geofysiske Publikasjoner. Direktor Th. Hesseberg, Der Norske Meteorologiske Institutt, Oslo, Norway.

Abbreviation.	Full Title and Address.
Geolog. Mag.	The Geological Magazine. Dulau & Co., Ltd., 32, Old Bond Street, London, W. 1.
Gerlands Beitr. z. Geophys.	Gerlands Beiträge zur Geophysik. Akademische Verlagsgesellschaft m.b.H., Schlossgasse 9, Leipzig, Germany.
Harvard Coll. Obs., Bull.	Bulletin of the Harvard College Observatory. The Observatory, Cambridge, Mass., U.S.A
Harvard Coll. Obs., Circ.	Circular of the Harvard College Observatory. The Observatory, Cambridge, Mass., U.S.A.
Helv. Phys. Acta	Helvetica Physica Acta. E. Birkhaeuser et Cie, Bâle, Switzerland.
Illum. Eng., London	The Illuminating Engineer. The Journal of Good Lighting. 32, Victoria Street, London, S.W. 1.
Imp. Acad. Tokyo, Proc.	Proceedings of the Imperial Academy of Tokyo. Ueno Park, Tokyo, Japan.
Indian Journ. Phys.	Indian Journal of Physics and Proceedings of the Indian Association for the Cultivation of Science. 210, Bow-Bazaar Street, Calcutta, India.
Indust. and Engin. Chem.	Industrial and Engineering Chemistry. The American Chemical Society. Charles L. Parsons, Secretary, Mills Building, Washington, D.C., U.S.A.
Indust. and Engin. Chem. (Analytical Edition)	Industrial and Engineering Chemistry. (Analytical Edition.) The American Chemical Society, Charles L. Parsons, Secretary, Mills Building, Washington, D.C., U.S.A.
Ingegnere	L'Ingegnere. Rivista Tecnica Sindacato Nazionale Fascista Ingegneri, Via Vivaio 17, Milan (113), Italy.
Inst. Civ. Eng., Proc.	Proceedings of the Institution of Civil Engineers. Great George Street, Westminster, London, S.W. 1.
I.E.E., J.	Journal of the Institution of Electrical Engineers. Savoy Place, Victoria Embankment, London, W.C. 2.
I.E.E. Japan, J.	Institution of Electrical Engineers of Japan. Denki-Gakkwai, No. 3, 1–Chome, Yûrakuchô, Kôjimachi-ku, Tokyo, Japan.
Inst. Eng. and Shipbuilders, Trans.	Transactions of the Institution of Engineers and Shipbuilders in Scotland. Elmbank Crescent, Glasgow, Scotland.
Inst. Mech. Eng., Proc.	The Proceedings of the Institution of Mechanical Engineers. Storey's Gate, St. James's Park, London, S.W. 1.
Inst. Naval Architects, Trans.	Transactions of the Institute of Naval Architects. 5, Adelphi Terrace, London, W.C. 2.
Inst. of Metals, J.	Journal of the Institute of Metals. 36, Victoria Street, London, S.W. 1.
Inst. Phys. and Chem. Research, Tokyo, Bull. (Abstracts)	Abstracts from the Bulletin of the Institute of Physical and Chemical Research. Iwanami Shoten, 16, Minamijimbŏchŏ, Kanda-ku, Tokyo, Japan.
Inst. Phys. and Chem. Research, Tokyo, Sci. Papers	Scientific Papers of the Institute of Physical and Chemical Research. Iwanami Shoten, 16, Minamijimbŏchŏ, Kanda-ku, Tokyo, Japan.
Inst. Post Office El. Eng., Papers	The Institution of Post Office Electrical Engineers, Selected Papers. General Post Office, Alder House, London, E.C. 1.
I.R.E., Proc.	Proceedings of the Institute of Radio Engineers. 450–454, Ahnaip Street, Menasha, Wis., U.S.A.

Abbreviation.	Full Title and Address.
Iron and Steel Inst., J.	Journal of the Iron and Steel Institute. 28, Victoria Street, London, S.W. 1.
Japanese Journ. Chem.	Japanese Journal of Chemistry. The Secretary, National Research Council, Imperial Academy House, Ueno Park, Tokyo, Japan.
Japanese Journ. Math.	Japanese Journal of Mathematics. The Secretary, National Research Council, Imperial Academy House, Ueno Park, Tokyo, Japan.
J. Inst. F.	Journal of the Institute of Fuel. 53, Victoria Street, Westminster, London, S.W. 1.
J. Math. Phys., Mass. Inst. of Technology	Journal of Mathematics and Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.
J. de Physique et le Radium	Journal de Physique et le Radium. 12, Place de Laborde, Paris (VIII^{e}).
J.O.S.A. and R.S.I.	Journal of the Optical Society of America and Review of Scientific Instruments. George Banta Publishing Company, 450–454, Ahnaip Street, Menasha, Wis., U.S.A.
J. Phys. Chem.	Journal of Physical Chemistry. 654, Madison Avenue, New York, U.S.A.
Journ. Sci. Instruments	Journal of Scientific Instruments. The Cambridge University Press, Fetter Lane, London, E.C. 4.
Journ. Télégraph.	Journal Télégraphique. Bureau International de l'Union Télégraphique, Berne, Switzerland.
J. Text. Inst.	Journal of the Textile Institute. 16, St. Mary's Parsonage, Manchester, England.
Junior Inst. Eng., J.	Journal of the Junior Institution of Engineers. 39, Victoria Street, Westminster, London, S.W. 1.
Kolloid Zeits.	Kolloid Zeitschrift. Theodor Steinkopff, Dresden-Blasewitz, Residenzstrasse 32, Germany.
K. Akad. Amsterdam, Proc.	Proceedings of the Koninklijke Akademie van Wetenschappen te Amsterdam. Amsterdam, Holland.
Kyoto Coll. Eng., Mem.	Memoirs of the Kyoto Imperial University College of Engineering. Maruzen Co., Ltd., Tokyo, Japan.
Kyoto Coll. Sci., Mem.	Memoirs of the College of Science, Kyoto Imperial University. Maruzen Co., Ltd., Tokyo, Japan.
Leeds Philosoph. and Lit. Soc., Proc.	Proceedings of the Leeds Philosophical and Literary Society. The University, Leeds, England.
Manchester Phil. Soc., Mem.	Memoirs and Proceedings of the Manchester Literary and Philosophical Society. 36, George Street, Manchester, England.
Mechanical Engineering	Mechanical Engineering. The American Society of Mechanical Engineers. 20th and Northampton Streets, Easton, Pa., U.S.A.
Meteorolog. Office, Prof. Notes and Geophys. Mem.	Professional Notes and Geophysical Memoirs of the Meteorological Office. H.M. Stationery Office, Adastral House, Kingsway, London, W.C. 2.
M.V. Gazette	Metropolitan-Vickers Gazette. Metropolitan-Vickers Electrical Co., Ltd., Trafford Park, Manchester, England.
Min. Mag.	The Mineralogical Magazine. Humphrey Milford, Oxford University Press, Amen House, Warwick Square, London, E.C. 4.
M.E.E.	Mining Electrical Engineer. Cromwell Buildings, Blackfriars Street, Manchester, England.

Abbreviation.	Full Title and Address.
Monthly Weather Rev.	Monthly Weather Review. Superintendent of Documents, Government Printing Office, Washington, D.C., U.S.A.
Nat. Acad. Sci., Proc.	Proceedings of the National Academy of Sciences. The Home Secretary, B and 21st Streets, Washington, D.C., U.S.A.
Nature	Nature. MacMillan & Co., Ltd., St. Martin's Street, London, W.C. 2.
N. Cimento	Il Nuovo Cimento. N. Zanïchelli, Società Italiana di Fisica, Bologna, Italy.
Observatory	Observatory. Taylor & Francis, Red Lion Court, Fleet Street, London, E.C. 4.
Onde Élec.	L'Onde Électrique. Société des Amis de la T.S.F., 40, Rue de Seine, Paris.
Optical Soc., Trans.	Transactions of the Optical Society. 1, Lowther Gardens, Exhibition Road, South Kensington, London, S.W. 7.
Phil. Mag.	The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Taylor & Francis, Red Lion Court, Fleet Street, London, E.C. 4.
Phot. Indust.	Photographische Industrie. Verlag der Union Verlagsgesellschaft Zweigniederlassung, Krausenstrasse 35/36, Berlin, S.W. 19.
Phot. J.	The Photographic Journal. The Secretary, 35, Russell Square, London, W.C. 1.
Phys. Rev.	The Physical Review. 450, Ahnaip Street, Menasha, Wis., U.S.A.
Phys. Soc., Proc.	Proceedings of the Physical Society of London. 1, Lowther Gardens, Exhibition Road, London, S.W. 7.
Phys. Math. Soc. Japan, Proc.	Proceedings of the Physico-Mathematical Society of Japan. Faculty of Science, Tôkyô Imperial University, Tokyo, Japan.
Phys. Zeits.	Physikalische Zeitschrift. S. Hirzel, Königstrasse 2, Leipzig, C. 1, Germany.
Pont. Accad. Sci., N. Lincei, Atti.	Atti della Pont. Accademia della Scienze Nuovi Lincei. Casina Pio IV, Vaticano, Rome, Italy.
Pont. Accad. Sci., N. Lincei, Mem.	Memorie della Pont. Accademia della Scienze Nuovi Lincei. Casina Pio IV, Vaticano, Rome, Italy.
P.O.E.E.J.	The Post Office Electrical Engineers' Journal. Electrical Review, Ltd., 4, Ludgate Hill, London, E.C. 4.
Power	Power. McGraw Hill Publishing Co., Inc., Tenth Ave. at 36th St., New York, U.S.A.
Preuss. Akad. Wiss. Berlin, Ber.	Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin. 38, Unter den Linden, Berlin.
Q.S.T. Français.	Radioeléctricité et Q.S.T. Français. 53, Rue Réaumur, Paris (IIe).
Rev. d'Él. et Méc.	Revue d'Électricité et de Mécanique. La Société Générale de Constructions Électriques et Mécaniques. 173, Boulevard Haussmann, Paris (VIIIe).
Rev. de Mét.	Revue de Métallurgie. 5, Cité Pigalle, Paris (IX).
Rev. d'Optique	Revue d'Optique Théorique et Instrumentale. Imprimerie Berger-Levrault, 18, Rue des Glacis, Nancy, France.
R.G.E.	Revue Générale de l'Électricité. 12, Place de Laborde, Paris (VIIIe).
Roy. Astron. Soc. Canada, J.	Journal of the Royal Astronomical Society of Canada. 198, College Street, Toronto, Canada.
Roy. Astron. Soc., Geophys, Supplement, Mem. and M.N.	Geophysical Supplement, Memoirs, and Monthly Notices of the Royal Astronomical Society, Burlington House, London, W. 1.

Abbreviation.	Full Title and Address.
Roy. Dublin Soc., Proc.	The Scientific Proceedings of the Royal Dublin Society. Ballsbridge, Dublin, Ireland.
Roy. Inst., Proc.	Proceedings of the Royal Institution of Great Britain. 21, Albemarle Street, London, W.1.
Roy. Irish Acad., Proc.	Proceedings of the Royal Irish Academy. Hodges, Figgis, & Co., Dublin, Ireland.
Roy. Meteorolog. Soc., J.	Quarterly Journal of the Royal Meteorological Society. Edward Stanford, Ltd., 12, 13 and 14, Long Acre, London, W.C. 2.
Roy. Meteorolog. Soc., Mem.	Memoirs of the Royal Meteorological Society. Edward Stanford, Ltd., 12, 13 and 14, Long Acre, London, W.C. 2.
Roy. Soc. Arts, J.	Journal of the Royal Society of Arts. G. Bell & Sons, Ltd., York House, Portugal Street, London, W.C. 2.
Roy. Soc. Canada, Trans.	Transactions of the Royal Society of Canada. Ottawa, Canada.
Roy. Soc. Edinburgh, Proc.	Proceedings of the Royal Society of Edinburgh. Robert Grant & Son, 126, Princes Street, Edinburgh, Scotland.
Roy. Soc. Edinburgh, Trans.	Transactions of the Royal Society of Edinburgh. Robert Grant & Son, 126, Princes Street, Edinburgh, Scotland.
Roy. Soc., Phil. Trans.	Philosophical Transactions of the Royal Society of London. Harrison & Sons, Ltd., 44–47, St. Martin's Lane, London, W.C. 2.
Roy. Soc., Proc.	Proceedings of the Royal Society of London. Harrison & Sons, Ltd., 44–47, St. Martin's Lane, London, W.C. 2.
Roy. Soc. Victoria, Proc.	Proceedings of the Royal Society of Victoria. Ford & Son, Drummond Street, Carlton, Melbourne, Australia.
*Roy. Techn. Coll. Glasgow, J.	Journal of the Royal Technical College, Glasgow. Robert Andersen, 142, West Nile Street, Glasgow, C. 1, Scotland.
Ryojun Coll. Eng., Mem.	Memoirs of the Ryojun College of Engineering. The Chairman of the Publication Committee. Ryojun College of Engineering, Port Arthur, South Manchuria.
Science	Science. Official organ of the American Association for the Advancement of Science. The Science Press, Grand Central Terminal, New York, U.S.A.
Shirley Inst., Mem.	Memoirs of the Shirley Institute. The British Cotton Industry Research Association, Shirley Institute, Didsbury, Manchester, England.
Siemens Zeits.	Siemens Zeitschrift. Siemensstadt, Berlin.
Soc. Belge Élect., Bull.	Bulletin de la Société Belge des Électriciens. 8, Rue Sabatier, Marcinelle, Belgium.
Soc. Franç. Élect., Bull.	Bulletin de la Société Française des Électriciens. 12 and 14, Rue de Staël, Paris.
Soc. Franç. Phot. et Ciné., Bull.	Bulletin de la Société Française de Photographie et Cinématographie. Rue de Clichy 51, Paris.
S. African I.E.E., Trans.	Transactions of the South African Institute of Electrical Engineers. Kelvin House, 100, Fox Street, Johannesburg, S. Africa.
T.F.T.	Telegraphen - und - Fernsprech - Technik. R. Dietze, Regensburgerstrasse 12A, Berlin, W. 50.
Terr. Mag.	Terrestrial Magnetism and Atmospheric Electricity. The Caxton Press, 420, Plum Street, Cincinnati, Ohio, U.S.A.
Tijds. Nederland Radiogenootschap.	Tijdschrift van het Nederlandsch Radiogenootschap gevestigd te Amsterdam. 11A, Elzentlaan, Eindhoven, Holland.

Abbreviation.	Full Title and Address.
Tohoku Math. J.	The Tohoku Mathematical Journal. Tohoku Imperial University, Sendai, Japan.
Tôhoku Univ., Sci. or Technol. Reports	Scientific or Technology Reports of the Tôhoku Imperial University. Maruzen Co., Ltd., Sendai, Japan.
Tokyo Univ. Aeronaut. Research Inst., Report	Report of the Aeronautical Research Institute, Tokyo Imperial University. Komaba, Tokyo, Japan.
Tokyo Univ. Earthquake Research Inst., Bull.	Bulletin of the Earthquake Research Institute, Tokyo Imperial University, Tokyo, Japan.
Union Obs. S. Africa, Circ.	Circular of the Union Observatory of South Africa.
Univ. Nac. La Plata, Estudio Ciencias	Universidad Nacionale de La Plata. Contribucion al Estudio de las Ciencias. La Plata, Argentine.
*Univ. Durham Phil. Soc., Proc.	Proceedings of the University of Durham Philosophical Society. E. Patterson, Asst. Librarian, Armstrong College, Newcastle-upon-Tyne, England.
Univ. of Illinois Eng. Exp. Sta., Bull.	Bulletin of the University of Illinois Engineering Experiment Station. University of Illinois, Urbana, Illinois, U.S.A.
*Univ. Pittsburgh, Bull.	Bulletin of the University of Pittsburgh, Pittsburgh, U.S.A.
V.D.I.	Zeitschrift des Vereines Deutscher Ingenieure. V.D.I. Verlag, G.m.b.H., Dorotheenstrasse 40, Berlin, N.W. 7.
Washington Acad. Sci., J.	Journal of the Washington Academy of Sciences. Mt. Royal and Guilford Aves., Baltimore, Maryland, U.S.A.
Wireless World and Radio Rev.	Wireless World and Radio Review. Dorset House, Tudor Street, London, E.C. 4.
World Power	World Power. 62, Lincoln's Inn Fields, London, W.C. 2.
Zeits. f. angew. Math. u. Mechanik.	Zeitschrift für angewandte Mathematik und Mechanik. Ingenieurwissenschaftliche Forschungsarbeiten. Verlag des Vereines Deutscher Ingenieure, Dorotheenstrasse 40, Berlin, N.W. 7.
Zeits. f. Elektrochem.	Zeitschrift für Elektrochemie und angewandte physikalische Chemie. Verlag Chemie, G.m.b.H., Corneliusstrasse 3, Berlin, W. 10.
Zeits. f. Hochfrequenztechn.	Zeitschrift für Hochfrequenztechnik. M. Krayn, Genthinerstrasse 39, Berlin, W. 10.
Zeits. f. Instrumentenk.	Zeitschrift für Instrumentenkunde. J. Springer, Linkstrasse 23/24, Berlin, W. 9.
Zeits. f. Krist.	Zeitschrift für Kristallographie. Akademische Verlagsgesellschaft m.b.H., Leipzig, Germany.
Zeits. f. Metallkunde	Zeitschrift für Metallkunde. V.D.I.-Verlag, G.m.b.H., Dorotheenstrasse 40, Berlin, N.W. 7.
Zeits. f. Physik	Zeitschrift für Physik. J. Springer, Linkstrasse 23/24, Berlin, W. 9.
Zeits. f. phys. Chem.	Zeitschrift für physikalische Chemie. (Abteilungen A and B.) Akademische Verlagsgesellschaft m.b.H., Leipzig, Germany.
Zeits. f. techn. Physik	Zeitschrift für technische Physik. J. A. Barth, Salomonstrasse 18B, Leipzig, Germany.
Zeits. f. wiss. Phot.	Zeitschrift für wissenschaftliche Photographie, Photophysik und Photochemie. J. A. Barth, Salomonstrasse 18B, Leipzig, Germany.